

EXHIBIT G

https://en.wikipedia.org/wiki/Spatial_light_modulator Go DEC SEP JAN
 40 captures 26 Jul 2004 - 12 Nov 2020 2004 2006 2008 About this capture

A "spatial light modulator" (SLM) is an object that imposes some form of spatially-varying [Modulation](#) on a beam of light. A simple example is an [Overhead projector transparency](#). Usually when the phrase SLM is used, it means that the transparency can be controlled by a [Computer](#). In the 1980s large SLMs were placed on overhead projectors to project computer monitor contents to the screen. Since then more modern [Projectors](#) have been developed where the SLM is built inside the projector. These are commonly used in meetings of all kinds for presentations. Usually, an SLM modulates the [Intensity](#) of the light beam, however it is also possible to produce devices that modulate the [phase](#) of the beam or both the intensity and the phase simultaneously. SLMs are used extensively in [holographic data storage](#) setups to encode information into a laser beam in exactly the same way as a transparency does for an overhead projector. They can also be used as part of a holographic display technology. SLMs have been used as a component in [optical computing](#).

==Electrically-addressed Spatial Light Modulator (EASLM)== As its name implies, the image on an electrically-addressed spatial light modulator is created and changed electronically, as in most electronic displays. EASLMs usually receive input via a conventional interface such as VGA input. They are commonly available at resolutions up to [SXGA](#) (1280 × 1024). Unlike ordinary displays, they are usually much smaller (having an active area of about 2 cm²) as they are not normally meant to be viewed directly. An example of an EASLM is the [Digital Micromirror Device](#) at the heart of [DLP](#) displays. ==Optically-addressed Spatial Light Modulator (OASLM)== The image on an optically-addressed spatial light modulator, also known as a light valve, is created and changed by shining light encoded with an image on its front or back surface. A photosensor allows the OASLM to sense the brightness of each pixel and replicate the image using liquid crystals. As long as the OASLM is powered, the image is retained even after the light is extinguished. An electrical signal is used to clear the whole OASLM at once. They are often used as the second stage of a very-high-resolution display, such as one for a computer-generated holographic display. In a process called active tiling, images displayed on an EASLM are sequentially transferred to different parts an OASLM, before the whole image on the OASLM is presented to the viewer. As EASLMs can run as fast as 2500 frames per second, it is possible to tile around 100 copies of the image on the EASLM onto an OASLM while still displaying full-motion video on the OASLM. This potentially gives images with resolutions of above 100 megapixels. ==Application as ultrafast pulse shapers== Inside a [Monochromator](#) in a 4f setup. Competing techniques: Prism pairs, grating pairs, dazzler, [Chirped](#) mirrors. ==References== *"[Digital Light Processing for High-Brightness, High-Resolution Applications](#)", Larry J. Hornbeck ([TI](#)), 21st century Archives <http://www.vxm.com/TIDLp.html> *"[Optically addressed spatial light modulators for replaying computer-generated holograms](#)", Coomber, Stuart D.; Cameron, Colin D.; Hughes, Jonathon R.; Sheerin, David T.; Slinger, Christopher W.; Smith, Mark A.; Stanley, Maurice ([QinetiQ](#)), Proc. [SPIE](#) Vol. 4457, p. 9-19 (2001) *"[Liquid Crystal Optically Addressed Spatial Light Modulator](#)", http://www-optique.enst-bretagne.fr/18_LCOASLM.htm *"[Computer-Generated Holography as a Generic Display Technology](#)", Slinger, C.; Cameron, C.; Stanley, M.; IEEE Computer, Volume 38, Issue 8, Aug. 2005, pp 46-53, <http://www.macs.hw.ac.uk/modules/F24VS2/Resources/Holography.pdf> Category:Display_technology